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Memo

DATE: *January 11, 2002*

TO: RHIC E-Coolers

FROM: *Ady Hershcovitch*

SUBJECT: **Minutes of the January 11, 2002 Meeting**

Present: Ilan Ben-Zvi, Michael Harrison, Ady Hershcovitch, Jorg Kewisch, William MacKay, Satoshi Ozaki, Stephen Peggs, Triveni Srinivasan-Rao, Thomas Roser, Dejan Trbojevic, Dong Wang, Jie Wei, Vitaly Yakimenko.

Topics discussed: R&D Plan, Electron Gun, RF Cavities, 939 Setup, magnets, LDRD.

R&D Plan: based on Derek suggestion during the December 14, 2001 meeting, a theme consistent with RHIC II was determined; to be included by Ilan in the next revision. However, a **detailed schedule is still needed.**

Electron Gun Design: concern about cooling system complexity of the AES electron gun design was discussed. Suggestions were made to have that design reviewed by BNL and/or Northrop Grumman experts. However, that complexity is due to a multitude of cooling pipes that results in a complex appearance. Vitaly pointed out that the design has beneficial cooling control features. At the end, it was decided that the complex appearance should not be an issue.

Ilan alluded to options for reducing electron gun power load with use of a SLED system or by sloshing RF power between the gun and a reservoir. Either of these options could reduce power dissipation by a factor of two compared to dc operation.

RF Cavities: to order cavities from DESY, there is a **need for CAD commitment for cavity purchases**. But first, **cavity parameters must be set** (to be given **high priority at the next meeting**).

Thomas indicated that Mike Brennan will be getting 4 spare 200 MHz cavities. Obtaining two additional cavities will be a good choice for bunch rotation. Mike suggested using two of the spares. Ilan pointed to other options at different frequencies that can be borrowed.

939 Setup: Triveni reported on status of the setup in building 939. The superconducting RF (SCRF) gun will be delivered in May. She started to work on the Safety Assessment Document (SAD) with Ed Lessard. Alan Stevens started calculations of radiation levels.

With the SCRF gun in operation (expected to generate 1 mA<, 2 MeV beam), a number of subsystems like interlocks can be tested.

Magnets: Jorg indicated that there is a challenge to the permanent magnet system. According to Ilan, many studies can be performed with a 15 MeV electron beam, thus reducing helium consumption. It requires varying the magnetic fields, hence the need for an electromagnet system. Thomas indicated that power savings can also be accomplished with a lower duty cycle. For RHIC an electromagnet system may be desirable (for different ion species). Mike suggested testing the system at a reduced cost, study the permanent magnet option before deciding on a system for RHIC.

LDRD: suggestions were made to submit a proposal for LDRD focused on the 939 facility. Satoshi suggested submission of a two-year $ 1.3M for solenoid development. Deadline for LDRD submissions is April 2nd.